

Abstract: In presented work we study relation between a real function, or a map between two metric spaces, and its graph, a subset of Cartesian product of two metric spaces. Mainly, we will focus on real function of one real variable, but if possible theorems will be concerning maps between other metric spaces. In first chapter we study functions with closed graph. First we characterize these functions by their limit points and then, under some additional conditions, we characterize set of points of discontinuity of a function with closed graph. In second chapter, we introduce Hausdorff distance of subsets of metric space and we will show relations between different types of convergence of functions and convergence of Hausdorff distance of their graphs to zero. In the last chapter, we define Gibbs phenomenon from the theory of Fourier series as convergence of Hausdorff distance of graphs of partial sums of Fourier series from modified graph of approximated function to zero.